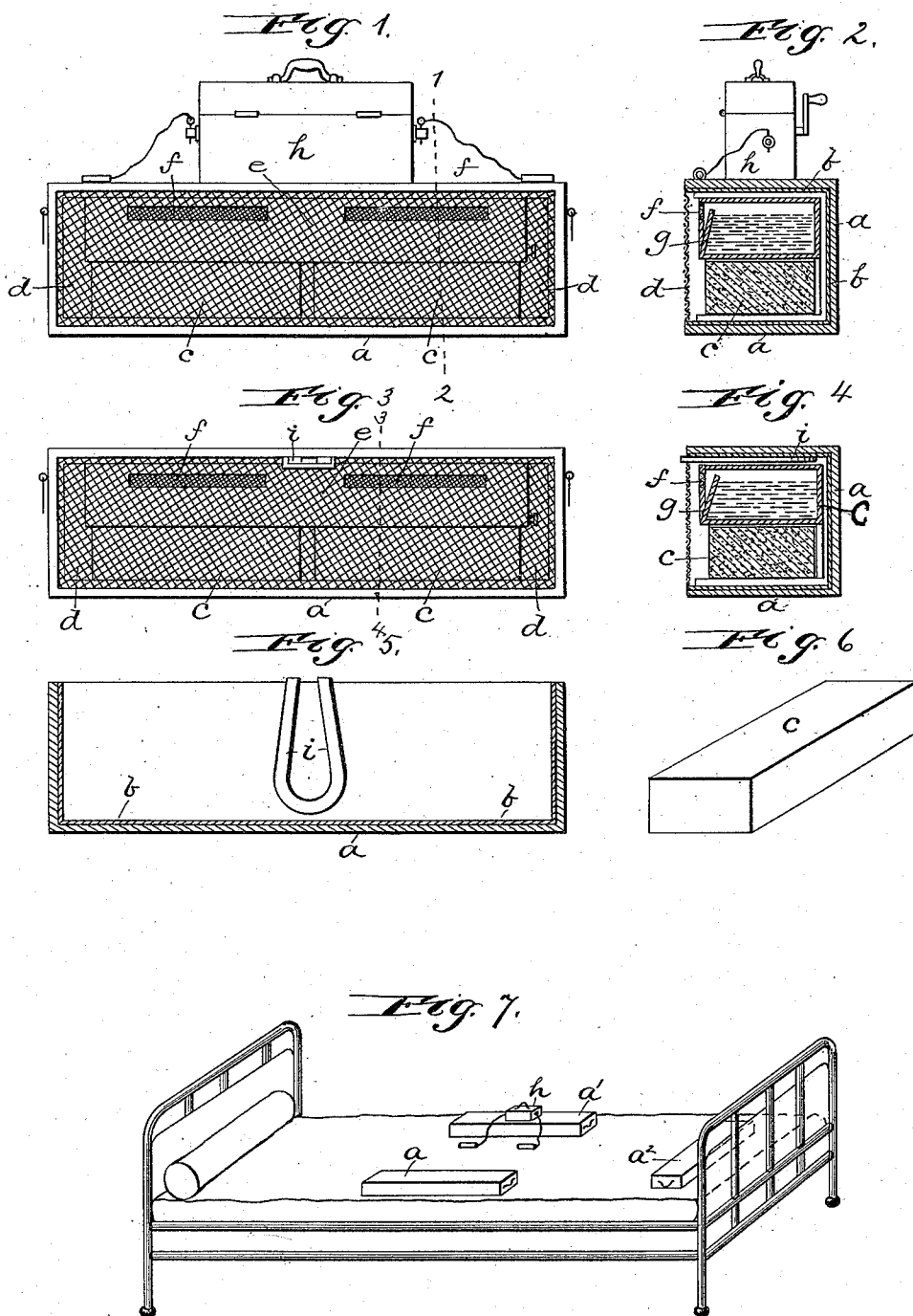


(No Model.)

F. A. D. DE DUNILAC.
HOT AIR BATH.

No. 558,677.

Patented Apr. 21, 1896.



Witnesses:
Wm. J. Fleming
St. M. Rheem

Inventor:
Ferdinand Auguste Dubois de Dunilac
By Frank D. Thomas, atty.

UNITED STATES PATENT OFFICE.

FREDERIC AUGUSTE DUBOIS DE DUNILAC, OF PARIS, FRANCE, ASSIGNOR
TO VICTOR AUGUSTE CHARLES NOEL, OF CHICAGO, ILLINOIS.

HOT-AIR BATH.

SPECIFICATION forming part of Letters Patent No. 558,677, dated April 21, 1896.

Application filed May 13, 1892. Serial No. 432,823. (No model.) Patented in England April 4, 1892, No. 6,487.

To all whom it may concern:

Be it known that I, FREDERIC AUGUSTE DUBOIS DE DUNILAC, a citizen of France, and a resident of Paris, France, have invented certain new and useful Improvements in Hot-Air Baths, Combined with Electric, Magnetic, or Electromagnetic Devices, (for which Letters Patent of Great Britain were granted me April 4, 1892, No. 6,487,) of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention has for its object the giving of hot-air baths to persons while lying in bed and subjecting such persons to electric, magnetic, or electromagnetic influences while undergoing such baths.

These baths are technically known to the medical profession as "aero-thermal" baths, and are recognized as of the greatest importance in the treatment of diseases directly or indirectly affecting the functions of the skin; but they have not heretofore been considered practicable because of the difficulty of carrying the paraphernalia necessary for such a bath to the patient, or because of the danger or difficulty involved in the removal of the patient to the place where the conveniences for taking such a bath could be had.

My invention consists of simple devices which can be readily transported from place to place and utilized wherever means for heating purposes exist, substantially as hereinafter fully described, and as illustrated in the drawings, in which—

Figure 1 represents a front elevation of my invention. Fig. 2 is a cross-section, taken on a line 1 2, of the apparatus, showing the magneto-electric devices applied thereto. Fig. 3 is a front elevation of a companion heater for that shown in Fig. 1. Fig. 4 is a cross-sectional view of the form of heater shown in Fig. 3. Fig. 5 is a cross-section therethrough. Fig. 6 is a perspective view of the heating-brick; and Fig. 7 is a perspective view of a bed, showing the manner of applying my invention thereto.

Referring to the drawings, *a* represents an oblong box, of wood or other suitable mate-

rial, which is preferably lined with sheet-iron or other suitable material *b* and is closed on all sides except one, and that one preferably one of its longitudinal vertical sides. This box is of such interior dimensions that it is capable of receiving, preferably, two bricks *c c*, placed end to end, a slight distance apart. It is not necessary for the depth of the box or its length to be more than sufficient to permit of the bricks *c* to be easily housed therein and to permit of the free circulation of the hot air around them.

The bricks *c* are of a peculiar construction, particularly adapted to the purposes of my invention, the requirements of which necessitate the retention of the heat and absorptive qualities, as will hereinafter be more fully explained. The bricks are therefore made of some porous absorptive clays or other suitable material, and are glazed or vitrified on all of their surfaces except their upper horizontal surface, which is preferably unglazed. These bricks do not preferably rest directly on the bottom of the box *a*, but upon wooden blocks or strips *c'*, so as to permit of atmospheric circulation under them. Resting upon these bricks *c* is a water-pan *C*, which is of a length and breadth preferably slightly greater than the aggregate length and breadth of the bricks it rests upon and of such a height that when placed on the bricks in the box *a* it reaches nearly to the roof thereof. This water-pan *C* is closed on all sides, but has a suitable closed drain-outlet at one end, and is provided on that longitudinal side next the open side of the box *a* with one or more small openings *f*, which are covered with wire-gauze and are provided with guards *g*, screwed to the inner side of the pan *C* in such manner as to prevent the water from spilling out.

Now when the bricks *c* have been heated in a stove or furnace to any suitable degree and are placed in the box and the water-pan placed in the box upon the bricks, the wire screen or wire-gauze door *d* is closed against the open side of the box *a*. The dry heat from the bricks soon causes the water to throw off vapors, which, issuing from the pan, mingle with the dry heat and become equal-

ized in temperature with the same in the exit from the box through the screen or wire-gauze door *d*.

Referring to Fig. 7, it will be observed that I prefer to use three of these boxes, one *a* (hereinbefore described) on one side of the patient, another *a'* (similar to box *a*) on the other side of the patient, and another *a''* (also similar to box *a*) at the foot of the patient.

The bed-clothing is, after the boxes are arranged, quickly thrown over the patient in such manner as to exclude the outside atmosphere as much as possible, and the sudden heat soon raises the temperature of the patient to such an extent as to open the pores of the skin, and causes profuse perspiration.

If desired, the water in the pan may be medicated. When this is done, it is obvious that the receptivity of the skin is greatly increased and the absorption of the medicant into the system, through the skin, is greatly facilitated.

Now I am aware that warming-pans and hot-water bags have been known and used as of old. These, however, cannot throw off any vapor, medicated or otherwise, and can only be utilized where a limited degree of heat is required.

Referring to the arrangement shown in Fig. 7, it will be noticed that on box *a'* I place an electric battery *E*, the electrodes of which can be conveniently grasped in the hands or be applied to different parts of the body of the patient while taking a bath. While I prefer the use of this battery, it is not absolutely essential. If desired, I can use an ordinary horseshoe-magnet *i* in conjunction with my improved apparatus. In this event I prefer to place it on top of the water-pan

C, about midway its length, and so that the poles of the magnet project out slightly beyond the plane of the screen-door *d*, through a suitable opening in the door made with reference thereto.

What I claim as new is—

1. The combination with a suitable portable lined box normally open on one side only, of the heating-bricks placed therein, and a water-pan resting on said bricks and normally closed on all sides with the exception of screen-covered openings in the front thereof which are provided with suitable guards, as set forth.

2. The combination with a suitably-lined box normally open on one side only, of the heating-bricks glazed or vitrified on all sides except its upper side, which are placed in said box, and a water-pan resting on said bricks and normally closed on all sides with the exception of suitable openings in the front thereof.

3. The combination with a suitably-lined portable box normally open on one side only, of the heating-bricks glazed or vitrified on all sides except its upper side, which are placed in said box, and a water-pan resting on said bricks having openings in its front which are covered by suitable screening, and are provided with guards *g*, as described.

The foregoing specification of my improvement in hot-air baths with combined electric magnetic or electromagnetic devices signed by me this 26th day of December, 1891.

FREDERIC AUGUSTE DUBOIS DE DUNILAC.

Witnesses:

WILSON P. BOYD,
ALBERT MOREAU.